CIO/NII
Enabling Net-Centric Operations

GSA / DoD Information Exchange

July 13, 2006

John G. Grimes
Assistant Secretary Defense
for Networks and Information Integration
DoD Chief Information Officer

Connecting People With Information

DoD CIO/NII Responsibilities

- Networks and Net-Centric Policies and Concepts
- Enterprise-wide integration of DoD information matters

Principal Staff Assistant

US Title 10
Advise the Secretary

- Command and Control
- Communications and Information Networks
- RF Spectrum Management
- Position, Navigation, Timing
- Non-Intelligence Space

Chief Information Officer

US Title 40
Manage Information Resources

- Enterprise-level strategist from the information perspective
- Enterprise-wide Information policy
- Information architect for the DoD Enterprise
- DoD-wide information executive

Authorities
- NII Charter (DoDD 5144.1 May 2, 2005)
- Section 113, Title 40, U.S.C., (formerly Clinger-Cohen Act of 1996 as amended)
- Responsibilities and Control Matrix

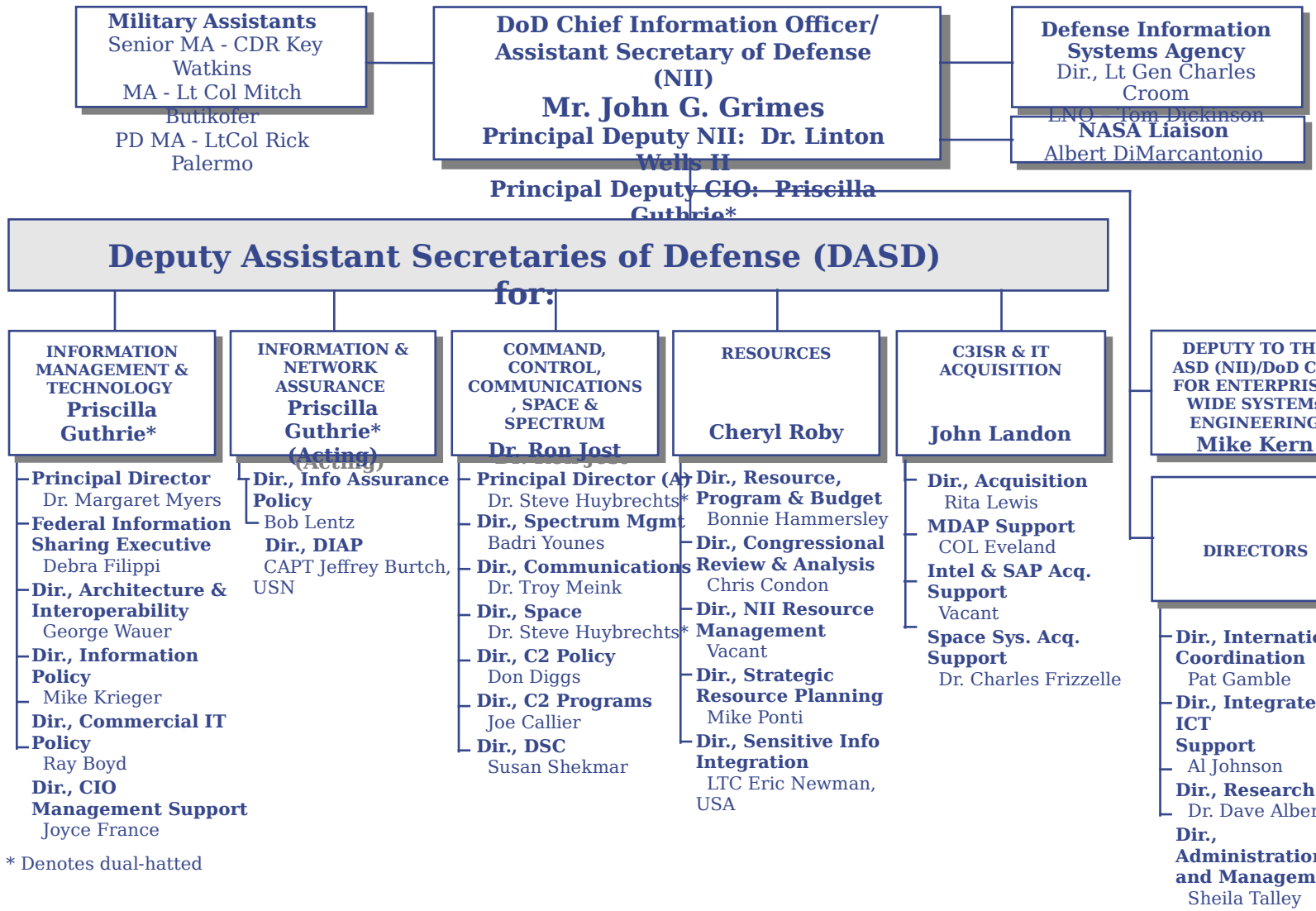
DoD CIO/NII Priorities

Lead the effort that will deliver the critical enabling capability required by the National Defense Strategy to **conduct Net-Centric Operations**

- Continue to reinforce CCA (Title 40) implementation
- Establish a true Information Age CIO for DoD
- Create a 21st century workforce of information pioneers --- recruitment, training, and education essential
- Ensure “information” is recognized as a critical strategic asset at all levels of the Department
- Tell a clear and compelling story of where the IT Enterprise is headed and how it will improve the efficiency and effectiveness of warfighter, intelligence, and business operations

CIO/NII
Enabling Net-Centric Operations

CIO/NII Organization

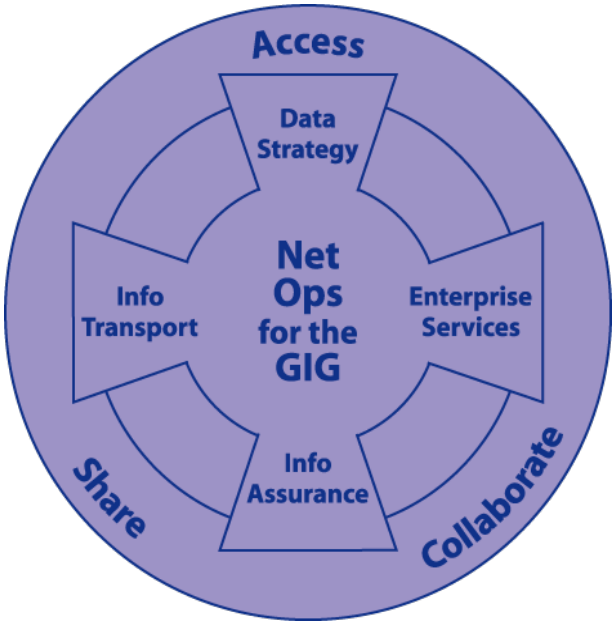


* Denotes dual-hatted

CIO/NII Enabling Net-Centric Operations

Connecting People With Information

Net-Centric Framework



- **Data Strategy:**
  - *How to "**share**" the data*
- **Enterprise Services:**
  - *How to "**access**" the data*
- **Information Transport:**
  - *How to "**move**" the data*
- **Information Assurance:**
  - *How to keep it "**dependable**"*
- **Network Operations:**
  - *How to "**manage**" the system*

Data: Discoverable, Accessible, Understandable

Connecting People With Information

CIO/NII Enabling Net-Centric Operations

Data Strategy

Vision – A flexible and agile Net-Centric, environment of "many-to-many" exchanges and effective decisions

Mission – Implement a data-centric strategy allowing access to and sharing of information

Data Strategy: Foundation

- Ensures **visible, accessible, and understandable** data
- Accelerates decision making by having data where needed and when needed
- Accommodates known and unanticipated users
- "Tags" data (intelligence/non-intelligence; raw/processed) with metadata to enable discovery
- Requires data and services registries to describe, post and store
- Posts data to shared spaces for users to access based on identity and role
- Organizes around Communities of Interest (COIs) using a shared vocabulary to exchange information

Enterprise Services

Vision – A Service-Oriented Architecture that is open, output focused and independent of location and system-ware

Mission – Establish easy-to-use services to access, share, collaborate

Enterprise Services: Overview

- **Messaging** – Ability to exchange information among users or applications
- **Discovery** – Processes to find information content or services
- **Mediation** – Software to help broker, translate, aggregate, fuse or integrate data/metadata
- **Collaboration** – Allows users to work together and jointly use selected capabilities on the network
- **User Assistant** – Automated “help” capabilities
- **Information Assurance** – Capabilities that provide confidentiality, integrity, availability, authorization, and assurance for information, users, applications, and networks
- **Storage** – Physical and virtual places to host data on the network
- **Application** – Infrastructure to host and organize distributed on-line processing
- **Enterprise Service Management** (ESM) – End-to-end performance monitoring, CM, and problem detection of GIG enterprise services

CIO/NII Enabling Net-Centric Operations

Information Transport

Objective - Provide access to and movement of information regardless of time, location, or disposition

Information Transport: Programs

- **Global Information Grid – Bandwidth Expansion** (GIG-BE):
  - Transforms Defense Information System Network (DISN) capabilities (capacity/availability)
  - Connects fixed locations to each other (but does not reach individual users at the tactical edge)
- **Transformational Satellite** (TSAT):
  - Connects mobile groups of users to each other and to fixed locations
  - Extends reach to individual users at the tactical edge
- **Joint Tactical Radio System** (JTRS):
  - Connects individual users within a group of mobile users
  - Provides network entry device for individual users at the tactical edge
- **Teleports**:
  - Provides a gateway between TSAT and GIG BE
- **Spectrum Management**
  - Ensures managed access to the airwaves

Network Operations

Objective - Ensure the continuous ability to easily access/ manipulate/share any information, from any location, at any time

NetOps: Functions

- **Manage and Assure Operations**
  - Monitor conditions of GIG assets on a continuous basis
  - Make decisions based on conditions and events
  - Direct responses to incidents

- **Govern Enterprise**
  - Set policies, roles and responsibilities for managing operations
  - Determine priorities for operations (i.e., bandwidth allocation, routing, incident response)
  - Establish common processes and standards for operating, monitoring, and responding

CIO/NII Enabling Net-Centric Operations

Information Assurance (IA)

Vision – Dynamic IA in support of Net-Centric Operations

Mission – Assure DoD's information, information systems, and information infrastructure

Information Assurance: Strategy

- **Protect Information**
  - Data protection requirements
  - Protection mechanisms
  - Robust mechanisms
- **Defend Information and Information Environment**
  - Engineer defenses
  - React and respond
  - Assess and evaluate activity
- **Provide Situational Awareness/IA Command and Control**
  - User Defined Operating Picture (UDOP)
  - Coordinate IA ops and decisions
  - Evaluate collaboration

- **Transform and Enable IA Capabilities**
  - Ensure IA integration into programs
  - Dynamic IA capabilities
  - Improve strategic decision-making
  - Information sharing
- **Create an IA Empowered Workforce**
  - Baseline skills
  - Enhance IA skill levels
  - Provide trained/skilled personnel
  - Infuse IA into other disciplines

CIO/NII Enabling Net-Centric Operations

Connecting People With Information

Critical Technology Enablers

IPv6
- Supports proliferation of IP-addressed applications/devices, and "comm on the move"
- DoD Transition Strategy:
  - Tech Refresh

VOIP
- Increases flexibility/capacity through broadband Internet connection; allows for converged voice and data on the same network
- DoD Initiatives:
  - Developing standards to end-to-end VOIP capability

Satellite Communications
- Enables real time connectivity, high data rate, ISR exfiltration, and comm on the move
- DoD TSAT Program Restructure:
  - IOC 2013; 4 on orbit 2017

Mobile Communications
- Provides network entry device for individual users at the tactical edge
- DoD JTRS Program:
  - Joint Program Office established
  - Form-factors being developed

Service-Oriented Architecture
- Establishes easy-to-use services to access, share and collaborate
- DoD Strategy:
  - Acquire commercially managed service (NCES goal)

Information Assurance
- Assures DoD's information, information systems, and information infrastructure
- DoD Strategy:
  - Fundamental shift from "walls and patches" to "secure from the start"
- DoD Initiatives:
  - Build IA architecture
  - Expand partnership with industry for IA R&D

Accomplishments

- **Information Age Chief Information Officer (CIO) established**
- **Bandwidth Expansion at 80+ DISN sites in support of the Global Information Grid**
- **Information sharing strategies institutionalized**
- **Enterprise Wide System Engineering strategy and plan**
- **Key technologies advances**
- **Information Assurance Component of the GIG Enterprise Architecture**
- **Portfolio Management initiated**
- **Community of Interest Pilot programs and capability demonstrations**
- **Scholarship programs to grow new talent**

CIO/NII Enabling Net-Centric Operations

A Net-Centric Information Environment

"I can get the information I need"

When I need it

Where I need it

How I need it

"Uncertainty is the defining characteristic of today's strategic environment"

National Defense Strategy

"...focus on providing the tip of the spear with the information and actionable knowledge to determine the best course of action..."

MG Peter W. Chiarelli
CG, 1st Cavalry Division

CIO/NII Enabling Net-Centric Operations

Connecting People With Information